Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for searching an audio database for a target audio clip in a multiprocessor system, comprising:

partitioning said audio database into a plurality of groups;

establishing a model for said target audio clip;

dynamically scheduling said plurality of groups to a plurality of processors in said multiprocessor system; [[and]]

processing said scheduled groups in parallel by said plurality of processors to search for said target audio clip[[;]], including partitioning each of said scheduled groups into at least one segment and for each segment:

(a) extracting a feature vector sequence ("FVS") for the segment, and

(b) modeling said FVS, based on a Gaussian Mixture model ("GMM") that includes a plurality of Gaussian components common for different segments and said target audio clip, by estimating mixture weights for each of said plurality of Gaussian components

(c) computing a Kullback-Leibler ("KL") distance between a GMM of said segment and a GMM of said target audio clip; and

(d) determining said segment matches said target audio clip when said KL distance is smaller than a pre-determined threshold, and skipping processing a number of segments when said KL distance is larger than a predetermined value, said number of segments dependent on the value of said KL distance.

Claim 2 (original): The method of claim 1, wherein partitioning said audio database comprises determining a size for each of said plurality of groups, said size being determined to

reduce the amount of overlapped computation among said plurality of groups and load imbalance in parallel processing of said plurality of groups.

Claim 3 (currently amended): The method of claim 1, wherein establishing a model for said target audio clip comprises extracting a FVS ~~feature vector sequence~~ from said target audio clip and modeling said FVS ~~feature vector sequence~~ based on a GMM that includes ~~Gaussian Mixture model ("GMM"), said GMM including~~ a plurality of Gaussian components.

Claim 4 (currently amended): The method of claim 3, wherein modeling said FVS ~~feature vector sequence~~ comprises estimating mixture weights for each of said plurality of Gaussian components.

Claim 5 (cancelled):

Claim 6 (currently amended): The method of claim [[5]] 1, wherein each of said at least one segment has the same length in time as that of said target audio clip.

Claim 7 (currently amended): The method of claim [[5]] 1, wherein if there is more than one segment in an audio stream, each segment partially overlaps with a segment that immediately precedes that segment.

Claims 8 - 11 (cancelled)

Claim 12 (cancelled)

Claim 13 (currently amended): An apparatus for searching an audio database for a target audio clip in a multiprocessor system, comprising:

a partitioning module to partition said audio database into a plurality of groups;

a scheduler to dynamically schedule said plurality of groups to a plurality of processors in said multiprocessor system; and

an audio searching module for each of said plurality of processors, to process said scheduled groups in parallel by said plurality of processors to search for said target audio clip;

wherein:

(a) one of said audio searching modules comprises (i) a feature extractor to partition an input audio stream into at least one segment and to extract a feature vector sequence ("FVS") from each of said at least one segment, said at least one segment having the same length in time as that of said target audio clip; and (ii) a modeling module to model said FVS for each segment based on a Gaussian Mixture model ("GMM") that includes a plurality of Gaussian components common among all of the segments;

(b) one of said audio searching modules is to process said target audio clip by extracting a clip FVS from said target audio clip and model said clip FVS using said GMM that includes a plurality of Gaussian components common for said target audio clip and segments of said input audio stream; and

(c) one of said audio searching modules includes a decision maker to (i) compute a Kullback-Leibler ("KL") distance between a GMM of a segment of said input audio stream and a GMM of said target audio clip; (ii) determine whether said segment matches said target audio clip based on said KL distance, and (iii) determine how many segments are to be skipped from processing based on said KL distance.

Claim 14 (original): The apparatus of claim 13, wherein said partitioning module further determines a size for each of said plurality of groups, said size being determined to reduce the amount of overlapped computation among said plurality of groups and load imbalance in parallel processing of said plurality of groups.

Claims 15 - 18 (cancelled)

Claim 19 (currently amended): An article comprising a machine-readable medium that contains instructions, which when executed by a processing platform, cause said processing platform to perform operations comprising:

partitioning said audio database into a plurality of groups;

establishing a model for a predetermined, non-randomly selected target audio clip;

dynamically scheduling said plurality of groups to a plurality of processors in said multiprocessor system; and

partitioning each of said scheduled groups into at least one segment;

after partitioning said audio database into the plurality of groups, processing said scheduled groups in parallel by said plurality of processors to search for said target audio clip

wherein:

(a) establishing a model for said target audio clip comprises extracting a feature vector sequence (“FVS”) from said target audio clip and modeling said FVS based on a Gaussian Mixture model ("GMM") that includes a plurality of Gaussian components;

(b) the FVS respectively includes a feature vector for every frame of a plurality of frames included in the target audio clip;

(c) modeling said FVS comprises estimating mixture weights for each of said plurality of Gaussian components;

(d) each of said at least one segment has the same length in time as that of said target audio clip;

(e) said plurality of Gaussian components are common for different segments and said target audio clip; and

(f) for each segment, (i) computing a Kullback-Leibler ("KL") distance between a GMM of said segment and a GMM of said target audio clip; (ii) determining that said segment matches said target audio clip when said KL distance is smaller than a predetermined threshold , (iii) skipping processing a number of segments when said KL distance is larger than a predetermined value, said number of segments dependent on the value of said KL distance, and (iv) the skipping processing includes skipping extracting a

feature vector sequence for each of the skipped segments, the extracting otherwise occurring when said KL distance is smaller than the predetermined value, and the segments to be skipped are sequential, consecutive, and immediately follow said segment upon which the KL distance is based.

Claim 20 (original): The article of claim 19, wherein partitioning said audio database comprises determining a size for each of said plurality of groups, said size being determined to reduce the amount of overlapped computation among said plurality of groups and load imbalance in parallel processing of said plurality of groups.

Claim 21 (cancelled)

Claim 22 (cancelled)

Claim 23 (currently amended): The article of claim 19, wherein processing said scheduled groups in parallel comprises:

~~partitioning each of said scheduled groups into at least one segment; and~~ for each segment,

extracting a FVS ~~feature vector sequence~~ for the segment, and

modeling said ~~feature vector sequence~~ FVS for the segment based on a GMM that includes ~~Gaussian Mixture model ("GMM"), said GMM including~~ a plurality of Gaussian components;

wherein the FVS ~~feature vector sequence~~ respectively includes a feature vector for every frame of a plurality of frames included in the segment.

Claim 24 (cancelled)

Claim 25 (currently amended): The article of claim [[24]] 19, wherein if there is more than one segment in an audio stream, each segment partially overlaps with a segment that immediately precedes that segment.

Claims 26 - 29 (cancelled)

Claim 30 (cancelled)

Claim 31 (cancelled)

Claim 32 (currently amended): The method of claim 1 including:

establishing a first preliminary model for a first and second frame of said target audio clip;

partitioning each of said scheduled groups into at least one segment; and for each segment,

extracting a first FVS ~~feature vector sequence~~ for a first and second frame of the segment,

establishing a second preliminary model for said first feature vector sequence based on a ~~Gaussian Mixture model ("GMM"), said~~ GMM including a plurality of Gaussian components.

processing said scheduled groups to search for said target audio clip by comparing the first and second preliminary models to produce a preliminary similarity measure; and

extracting a second FVS ~~feature vector sequence~~ for every frame of the segment and establishing a full model for said second FVS ~~feature vector sequence~~ based on the preliminary similarity measure exceeding a threshold.

Claim 33 (cancelled)